DATA VALIDATION REPORT

8801 E MARGINAL WAY

Prepared for:

Shannon and Wilson
404 N 34th Street, Suite 100
Seattle, WA 98103

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, Washington 98101

EcoChem Project: C13109-2

March 22, 2021

Approved for Release:

Christine Ransom
Technical Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results compliance review (EPA Stage 2A) performed on soil and quality control sample data for the 8801 E Marginal Way project. A complete list of samples is provided in the Sample Index.

Samples were analyzed by Frontier Analytical, El Dorado Hills, California. The analytical method and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Dioxins/Furans	EPA 1613	E. Clayton	C. Ransom

The data were reviewed using guidance and quality control criteria documented in the analytical methods; the *Lower Duwamish Waterway Sampling and Analysis Plan and Quality Assurance Project Plan* (Leidos, Inc., February 2017); *National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review* (USEPA, April 2016).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR, the data are to should not be used as a more appropriate result exists. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as APPENDIX A. The qualified data summary table (QDST) is included as APPENDIX B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
8801 E Marginal Way

SDG	SAMPLE ID	LAB ID	Dioxins/Furans
2102417	A4-1:8	13613-001-SA	✓
2102417	A4-3:8	13613-002-SA	✓
2102417	A4-103:8	13613-003-SA	✓

DATA VALIDATION REPORT
Shannon & Wilson - 8801 E Marginal Way
Dioxin/Furan Compounds by EPA 1613A

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Frontier Analytical, El Dorado Hills, California. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2102414	3 Soil	Stage 2A

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The quality control (QC) requirements that were reviewed are listed in the following table.

✓	Sample Receipt, Preservation, and Holding Times	2	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Labeled Compound Recovery	1	Compound Identification
✓	Ongoing Precision and Recovery (OPR)	2	Compound Quantitation

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blank samples were submitted with this SDG.

Field Duplicates

One set of field duplicates was submitted: A4-3:8 and A4-103:8. A relative percent difference control limit of 50% was used to evaluate results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the values must be less than 2x the RL. Precision outliers are noted in the following table. Results in the parent and duplicate were estimated (J-9).

ANALYTE	OUTLIER	QUALIFIER
1,2,3,6,7,8-HxCDD	RPD	J-9
1,2,3,7,8,9-HxCDD	RPD	J-9
1,2,3,4,6,7,8-HpCDD	RPD	J-9
OCDD	RPD	J-9
1,2,3,4,7,8-HxCDF	Diff >2x RL	J-9
2,3,4,6,7,8-HxCDF	Diff >2x RL	J-9
1,2,3,4,6,7,8-HpCDF	RPD	J-9
1,2,3,4,7,8,9-HpCDF	RPD	J-9
OCDF	RPD	J-9
Total HxCDD	RPD	J-9
Total HpCDD	RPD	J-9
Total TCDF	RPD	J-9
Total PeCDF	RPD	J-9
Total HxCDF	RPD	J-9
Total HpCDF	RPD	J-9

Compound Identification

The method requires the confirmation of 2,3,7,8-TCDF detects using an alternate GC column. The DB5 column that is typically used cannot fully separate 2,3,7,8-TCDF from closely eluting non-target TCDF isomers. The laboratory did not perform a second column confirmation for Sample A4-1:8; however, the laboratory uses a DB5MS column. This modified column has been proven to adequately resolve the TCDF isomers. No action was taken.

Compound Quantification

Several results for total homolog groups were flagged as containing EMPCs or diphenyl ether interferences for one or mor congeners in the chlorination group. These results were estimated (J-25) to indicate a potential high bias.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory performed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the labeled compound and OPR recoveries and precision was acceptable as indicated by the field duplicate RPD values.

Data were estimated based on field duplicate precision outliers. Some total homolog groups were estimated based on EMPCs and diphenyl ether interferences.

All data, as qualified, are acceptable for use.

ECOCHEM
Data Quality

APPENDIX A

DATA QUALIFIER DEFINITIONS
REASON CODES
AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)[1] where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)[1] where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)[1] for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)[1] where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)[1] where appropriate
	12	Reference Material Use bias flags (H,L)[1] where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)[1] where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)[1] where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

[1] H = high bias indicated
L = low bias indicated

Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Waters/Solids ≤ 6°C & in the dark Tissues <-10°C & in the dark **Preservation Aqueous:** If Cl_2 is present Thiosulfate must be added and if pH > 9 it must be adjusted to 7 - 9	NFG [1] Method[2]	J(pos)/R(ND) if thiosulfate not added if Cl_2 present; J(pos)/UJ(ND) if pH not adjusted J(pos)/UJ(ND) if temp > 20°C	1	**EcoChem PJ, see TM-05**
Holding Time	**If properly stored, 1 year or:** **Extraction (all matrices):** 30 days from collection **Analysis (all matrices)**: 45 days from extraction	NFG [1] Method[2]	If not properly stored or HT exceedance: J(pos)/UJ(ND)	1	**EcoChem PJ, see TM-05** Gross exceedance = > 1 year 2011 NFG **Note:** Under CWA, SDWA, and RCRA the HT for H2O is 7 days.
Instrument Performance					
Mass Resolution (Tuning)	PFK (Perfluorokerosene) ≥10,000 resolving power at m/z 304.9824. Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift.	NFG [1] Method [2]	R(pos/ND) all analytes in all samples associated with the tune	24	Notify PM
Windows Defining Mix	Peaks for first and last eluters must be within established retention time windows for each selector group (chlorination level)	NFG [1] Method [2]	If peaks are not completely within windows (clipped): If natives are ok, J(pos)/UJ(ND) homologs (Totals) If natives are affected, R all results for that selector group	24	Notify PM
Column Performance Mix	Both mixes must be analyzed before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) where x = ht. of TCDD (or TCDF) & y = baseline to bottom of valley For all isomers eluting near the 2378-TCDD (TCDF) peak (TCDD only for 8290)	NFG [1] Method [2]	J(pos) if valley > 25%	24	**EcoChem PJ, see TM-05, Rev. 2**; Note: TCDF is evaluated only if second column confirmation is performed
Initial Calibration **Sensitivity**	S/N ratio > 10 for all native and labeled compounds in CS1 std.	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5A	
Initial Calibration **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	If 2 or more ion ratios are out for one compound in ICAL, J(pos)	5A	**EcoChem PJ, see TM-05, Rev. 2**

Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Initial Calibration (Minimum 5 stds.) **Stability**	%RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD < 35% for labeled compounds under 1613b)	NFG [1] Method [2]	J(pos) natives if %RSD > 20%	5A	
	Absolute RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 & >15 min on DB-225	NFG [1] Method [2]	Narrate, no action		**EcoChem PJ, see TM-05, Rev. 2**
Continuing Calibration (Prior to each 12 hr. shift) **Sensitivity**	S/N ratio for CS3 standard > 10	NFG [1] Method [2]	If <10, elevate Det. Limit or R(ND)	5B	
Continuing Calibration (Prior to each 12 hr. shift) **Selectivity**	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	NFG [1] Method [2]	For congener with ion ratio outlier, J(pos) natives in all samples associated with CCAL. No action for labeled congener ion ratio outliers.	25	**EcoChem PJ, see TM-05**
Continuing Calibration (Prior to each 12 hr. shift) **Stability**	%D+/-20% for native compounds %D +/-30% for labeled compounds **(Must meet limits in Table 6, Method 1613B)** If %D in the closing CCAL are within 25%/35%, the mean RF from the two CCAL may be used to calculate samples **(Section 8.3.2.4 of 8290)**.	NFG [1] Method [2]	**Labeled compounds:** Narrate, no action. **Native compounds:** 1613: J(pos)/UJ(ND)if %D is outside Table 6 limits J(pos)/R(ND) if %D is +/-75% of Table 6 limits 8290: J(pos)/UJ(ND) if %D = 20% - 75% J(pos)/R(ND) if %D > 75%	5B (H,L)[3]	
	Absolute RT of $^{13}C_{12}$-1234-TCDD and $^{13}C_{12}$-123789-HxCDD should be ± 15 seconds of ICAL RRT for all other compounds must meet criteria listed in Table 2 Method 1316.	NFG [1] Method [2]	Narrate, no action	5B	**EcoChem PJ, see TM-05**
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG [1] Method [2]	U(pos) if result is < 5X action level.	7	**Hierarchy of blank review:** **#1 - Review MB, qualify as needed** **#2 - Review FB , qualify as needed**
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL		U(pos) if result is < 5X action level.	6	

Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) if both %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias **PJ if only one %R outlier**	8 (H,L)[3]	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only unless other QC indicates systematic problems.
MS/MSD (RPD)	**MS/MSD not typically required for HRMS analyses.** If lab analyzes MS/MSD then one set per matrix per batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos) in parent sample if RPD > CL	9	Qualify parent sample only.
LCS (or OPR)	One per lab batch (of ≤ 20 samples) Use most current laboratory control limits **or** Limits from Table 6 of 1613B	NFG [1] Method [2]	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	10 (H,L)[3]	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	**LCSD not typically required for HRMS analyses.** One set per matrix and batch of 20 samples RPD < 35%	Method [2] Ecochem standard policy	J(pos) assoc. compound in all samples if RPD > CL	9	Qualify all associated samples.
Lab Duplicate (RPD)	**Lab Dup not typically required for HRMS analyses.** One per lab batch (of ≤ 20 samples) Use most current laboratory control limits	EcoChem standard policy	J(pos)/UJ(ND) if RPD > CL	9	
Labeled Compounds (Internal Standards)	Added to all samples %R = 40% - 135% in all samples 8290 %R must meet limits in Table 7 Method 1613B	NFG [1] Method [2]	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	13 (H,L)[3]	
Field Duplicates	Solids: RPD <50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project	9	**Use professional judgment**

Dioxin/Furan Analysis by HRMS
(Based on Dioxin NFG 2011 and Methods EPA 1613B and SW-846 8290)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation					
Quantitation/ Identification	All ions for each isomer must maximize within ± 2 seconds. S/N ratio >2.5 Ion ratios must meet criteria listed in Table 8 Method 8290, or Table 9 of 1613B; RRTs w/in limits in Table 2 of 1613B	NFG [1] Method [2]	Narrate in report; qualify if necessary NJ(pos) for retention time outliers. U(pos) for ion ratio outliers.	25	**EcoChem PJ, see TM-05**
EMPC (estimated maximum possible concentration)	If quantitation identification criteria are not met, laboratory should report an EMPC value.	NFG [1] Method [2]	If laboratory correctly reported an EMPC value, qualify the native compound U(pos) to indicate that the value is a detection limit and qualify total homolog groups J (pos)	25	**Use professional judgment See TM-18**
Interferences	Interferences from chlorodiphenyl ether compounds	NFG [1] Method [2]	J(pos)/UJ(ND) if present	23	**See TM-16**
	Lock masses must not deviate ± 20% from values in Table 8 of 1613B	Method [2]	J(pos)/UJ(ND) if present	24	**See TM-17**
Second Column Confirmation	All 2,3,7,8-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC criteria must also be met for the confirmation analysis.	NFG [1] Method [2]	Report the DB-225 value. If not performed use PJ.	3	DNR-11 DB5 result if both results from both columns are reported. **EcoChem PJ, see TM-05**
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.		Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	

(pos) - positive (detected) results; (ND) - not detected results

[1] National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) & Chlorinated Dibenzofurans (CDFs) Data Review, September 2011

[2] Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), USEPA SW-846, Method 8290

[2] EPA Method 1613, Rev.B, Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGS/HRMS, October 1994

[3] NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

ECOCHEM
Data Quality

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
8801 E Marginal Way

SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB QUAL	DV QUAL	DV CODE
A4-1:8	13613-001-SA	E1613A	Total HxCDF	28.5	pg/g	D,M	J	25
A4-1:8	13613-001-SA	E1613A	Total PeCDF	24.5	pg/g	D,M	J	25
A4-1:8	13613-001-SA	E1613A	Total TCDD	7.41	pg/g	M	J	25
A4-1:8	13613-001-SA	E1613A	Total TCDF	25.6	pg/g	D,M	J	25
A4-3:8	13613-002-SA	E1613A	1,2,3,4,6,7,8-HpCDD	5430	pg/g	*	J	9
A4-3:8	13613-002-SA	E1613A	1,2,3,4,6,7,8-HpCDF	1050	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	1,2,3,4,7,8,9-HpCDF	62.4	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	1,2,3,4,7,8-HxCDF	14.1	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	1,2,3,6,7,8-HxCDD	113	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	1,2,3,7,8,9-HxCDD	37.8	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	2,3,4,6,7,8-HxCDF	12.5	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	OCDD	89300	pg/g	*	J	9
A4-3:8	13613-002-SA	E1613A	OCDF	5260	pg/g	*	J	9
A4-3:8	13613-002-SA	E1613A	Total HpCDD	11200	pg/g	*	J	9
A4-3:8	13613-002-SA	E1613A	Total HpCDF	4860	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	Total HxCDD	881	pg/g		J	9
A4-3:8	13613-002-SA	E1613A	Total HxCDF	460	pg/g	D,M	J	9,25
A4-3:8	13613-002-SA	E1613A	Total PeCDF	31.8	pg/g	D,M	J	9,25
A4-3:8	13613-002-SA	E1613A	Total TCDF	32.2	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,4,6,7,8-HpCDD	1440	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,4,6,7,8-HpCDF	230	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,4,7,8,9-HpCDF	14.4	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,4,7,8-HxCDF	7.68	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,6,7,8-HxCDD	40.8	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	1,2,3,7,8,9-HxCDD	22.3	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	2,3,4,6,7,8-HxCDF	6.93	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	OCDD	19800	pg/g	*	J	9
A4-103:8	13613-003-SA	E1613A	OCDF	1130	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	Total HpCDD	3000	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	Total HpCDF	888	pg/g		J	9

Qualified Data Summary Table
8801 E Marginal Way

SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB QUAL	DV QUAL	DV CODE
A4-103:8	13613-003-SA	E1613A	Total HxCDD	497	pg/g		J	9
A4-103:8	13613-003-SA	E1613A	Total HxCDF	194	pg/g	D,M	J	9,25
A4-103:8	13613-003-SA	E1613A	Total PeCDF	66.2	pg/g	D,M	J	9,25
A4-103:8	13613-003-SA	E1613A	Total TCDF	73.1	pg/g	D,M	J	9,25